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ABSTRACT

As computers become more prevalent in society, educators are obligated to plan and provide for classroom use of computer technology. This document describes an investigation into the readiness of elementary school teachers to integrate computer technology into their classrooms. A survey of sixth grade teachers at a target Florida school and three other nearby schools with similar demographic profiles revealed high levels of computer anxiety and low levels of computer use being integrated into the curriculum. A computer training program was developed for teachers at the target school, and at the end of 12 weeks of implementation the target group of four educators demonstrated an increase in computer presentation skills, a decrease in computer anxiety, and increased acquaintance of presentation software such as Microsoft's Powerpoint, word processing, and various computer tutorials. The success of the training program suggests that school districts should consider allocating funds for teacher training, not simply for the improvement of technological status. Appendices include copies of measurement instruments: (1) technology awareness survey; (2) computer knowledge pretest and posttest; (3) technology attitudinal survey; (4) computer software pretest and posttest; (5) individual pre- and post-assessment data; (6) leadership rating scale; and (7) a program evaluation form. (Contains 14 references.) (BEW)

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IMPLEMENTATION OF TECHNOLOGY IN THE CLASSROOM

by

Robert W.Shick

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A Practicum Final Report Submitted to the Faculty
of the Center for the Advancement Education of
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fulfillment of the requirements
for the degree of Master
of Science

The abstract of the report may be placed in a National
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Abstract

C.T.C.C. A Program Designed To Increase The Application Of Computer Technology When Presenting Elementary Classroom Curriculum. Shick, Robert W., 1995: Practicum Report, Nova Southeastern University, The Center for the Advancement of Education. Descriptors: Computer Assisted Curriculum Presentation/ Attitudes/Staff Development Computers Education/ Software Knowledge Development/

The ability to apply modern computer technology when presenting classroom curriculum was addressed through a computer technology training program. A second area targeted through this training program was a tutorial session allowing the target group to be introduced to a variety of computer software programs available for application in a modern day classroom. This training program targeted fifth grade teachers and attempted not to only train these educators in the proper uses of the computer software Powerpoint, but also to ascertain their knowledge of computers and introduce them to the variety of strategies that can be applied in a classroom using computer technology. This training program was designed as a computer introductory course. The beginning of this training specializes in the basic uses of a computer work station. Word processing and tutorial computer uses were introduced following instruction on the uses of the Powerpoint software. Two measuring devices, a written Computer Knowledge Pretest/Post test and a Computer Software Pretest/Post test were applied to measure gained knowledge of computer technology and application. The use of a Quality Circle Discussion was also employed in this research to measure teacher frustration and progress throughout this training program.

The results of this training program indicated an increased comfort level when applying computer technology to the presentation of classroom curriculum. This program also displayed an increase in the target group's knowledge of a variety of educational computer software programs available to be used in the modern day classroom. It was concluded that the implementation of a basic computer training program for educators is a viable solution to aid in assisting with the application of technology within a classroom setting. Appendices include a technology awareness survey and an attitudinal survey used to measure achievement as a result of this program.

Table of Contents

Page

Abstract.....ii

Authorship Statement/Document Release.....iii

Observer's Verification.....iv

Chapters

I. Background.....1

II. Research and Solution Strategy.....17

III. Method.....38

IV. Results.....44

V. Recommendations.....50

Reference List.....54

Appendices

Appendix A: Technology Awareness Survey.....57

Appendix B: Computer Knowledge Pretest/Post test.....59

Appendix C: Technology Attitudinal Survey.....61

Appendix D: Computer Software Pretest/Post test.....63

Appendix E: Individual Pre- and Post Assessment Data..65

Appendix F: Leadership Rating Scale.....68

Appendix G: C.T.C.C. Program Evaluation.....70

CHAPTER I

Purpose

The target site for this practicum was a modified school calendar multi-track elementary school located in the central east coast of Florida. The school was one of three elementary schools constructed in a relatively new community consisting of an estimated 32,000 residents.

The school facility was located on a 10 acre lot centrally located in a middle class community. The target site was designed with six main buildings and a commons area located in the center of the complex. There were presently 10 portables being used as classrooms, one portable functioning as an intersession enrichment program, one security trailer, and a cooling system facility on the campus. The target site grounds were completely enclosed with six foot security fencing. The classrooms in each building were set up in groups of four with a center pod work area. Grade levels were strategically positioned in each building to allow the utilization of the pod area to promote grade level planning.

State funding, retrofit grant monies, P.T.A. funding, and business partnership donations, have allowed the target school to begin increasing utilization of computer technology. Each classroom was equipped with one computer. The pod area of each grade level also contained one computer in which the time usage was distributed equally among four classrooms. This computer operated both as a planning tool for the teacher, as well as an instructional tool for the students.

The target site computer lab was equipped with 10 computers (eight Macintosh and two IBM). This lab has been wired to accommodate one computer with a phone line to allow global communications. Wiring throughout the target site was presently under construction to begin technological advancement toward the Smart School Concept.

The school staff consisted of one principal and one assistant principal. There were 43 classroom teachers, five activity teachers consisting of Spanish, music, physical education, art, and computer education, two guidance counselors, two speech pathologists, one elementary specialist, one modified school calendar coordinator, two resource specific learning disability teachers, two emotionally mentally handicapped program

teachers, one media specialist, one library clerk, one gifted teacher, and five teacher aids. One third of the staff had at least a masters degree. Thirty percent of the teachers had less than 10 years of teaching experience. The school also operated with four office personnel, nine custodians, and six cafeteria employees.

The total student population at the target school was 989 students. Fifty two percent of the students were males and 48 percent of the students were females. From the total population, 93 percent of the students were Whites, while the remaining seven percent were of Black or Hispanic origin. The grade level breakdown in student population was as follows: 120 kindergarten students; 35 transitional kindergarten students; 173 first grade; 139 second grade; 133 third grade; 122 fourth grade; 97 fifth grade; 127 sixth grade; and 42 exceptional education students. The student mobility rate of 4.55 percent was considerably below district and state levels; so too was the 15.81 percent of the students eligible for free and reduced lunch.

The surrounding community had a variety of socioeconomic status. Students at the target school ranged from lower class to lower and middle income families. The greater composition fit into the lower middle income bracket.

The writer of this practicum is a December of 1988 graduate of Bloomsburg University with a Bachelor of Science degree in elementary education. Following graduation from Bloomsburg University, the author was employed as a substitute teacher for several school districts in the central Pennsylvania area beginning in January of 1989 and continuing through June of 1990.

Throughout this period, the author substitute taught in all elementary grade levels including many excursions in special education settings. In August of 1990, the author was employed as a fifth grade teacher at the target modified school calendar elementary school. All subject areas were taught in this grade level for three years. Beginning with the 1993 school year to the present, the author has been positioned as a sixth grade social studies teacher. In addition, the author is a student council representative, school store representative, member of the technology committee, and member of the school improvement committee.

As a sixth grade teacher, the author identified a need to improve the teacher directed implementation of modern computer technology into the curriculum. Meeting this need would help build a strong academic and social foundation for student achievement while providing parents, teachers, and administrators an opportunity to

establish open communication between the elementary school and the home environment.

This background experience has led the author to the interest of this research. The writer feels that it is an educator's responsibility to continue to advance the uses of technology in the classroom so that the students may be prepared to live productive lives on our society long after their academic years.

Eighty three percent of the teachers at the target school have shown a lack of knowledge of technology skills in relation to teaching and learning. The implementation of technology in education is a major role not only in the classrooms but also in the entire school and home environment. A large variety of integrated computer software is available for all subject areas. However, it is not being utilized due to improper training for teachers in computer technology. Software designed for grading, lesson presentation, and parental communication that would make a teacher's overburdened schedule more simplified is also available.

These materials, among many others, are flooding the educational technology market. However, lack of computer literacy and technological skills in many colleagues forces these amazing advances to be non-functional. As a future administrator, it is imperative

to assist teachers in becoming knowledgeable of the implementation of technology in order for the school system to be operating at its optimum level of effectiveness.

Growth and development in the United States educational system has proven beneficial in the progression that has named America a world leading nation. Modern technology has assisted in maintaining this status. This technology has allowed our military system to be the elite of the world with both weaponry in the war zone and communications systems behind the military scenes. Technological advances in the media and weather forecast systems have allowed the public to be aware of situations that culminate in a moments notice. Computerized graphics aid the special effects in television and theater productions so these activities can be thoroughly enjoyable. In the state of Florida, technological advances in the areas of science and mathematics play an important role for the leading space program in the world. Due to this interest in outer space exploration, the educators in the Space Coast area show a sincere interest in improving knowledge of the implementation of modern technology into the classroom.

Research in past years has shown both a need and

desire to improve the education system in the United States of America. Competitive pressure from industrial nations around the world has initiated an interest in educational improvement at all grade levels in public education. A concentration directed toward the problem of integration of modern technology into public education's curriculum has led to the interest of this research. One of an educational administrator's many responsibilities is to be aware of the needs of the faculty and staff and work to meet these needs. Computer integration into the classroom is an essential component of every school's development and growth.

The location of the target site attracts a variety of students from around the United States of America and neighboring countries. A great demand for technological industry is recognized by this school district and continually acts to address improvements in education. With technology improving and changing so rapidly, it is difficult for public school systems to purchase expensive computer hardware and software, and also see that proper training is implemented in all district schools.

Through a needs assessment administered in May of 1994, 30 percent of the teachers at the target site indicated a priority need to improve the implementation

of technology skills used by teachers for instruction and student interaction. Further, 60 percent of the faculty at the target school expressed a strong desire to increase technological training. The final 10 percent showed little desire to further enhance their classroom with technology.

Computer integration in the classroom has also been recognized as an area of great concern by the Florida Commission on Education Reform and Accountability school improvement plan under Blueprint 2000 (June 1994). As stated in Blueprint 2000 Goal 3, Standard 7, "Florida students integrate their knowledge and understanding of how social, organizational, information and technological systems work with their abilities to analyze trends, design and improve systems, and use and maintain appropriate technology." This Standard, one of many, states evidence that the state of Florida has determined computer technology to be a topic that is continually changing and improving. It is mandatory that our public school system maintain the training and implementation of state of the art technology in the classroom environment.

The school improvement committee at the target site has defined the importance of continual growth in computer technology under Goal 2, Objective 6. This

objective states, "Encourage all learners to set high standards and use minds productively in developing the whole person." Under Goal 6 of this objective it states "Implement the phases of the technology plan". This plan further dissects the needs to show continual expansion of technology throughout the curriculum at the target school.

It is apparent that the responsibility of the professional educator is to enhance a classroom with the tools that would most effectively promote learning. In today's society, technological advances are a norm; therefore, it is imperative to accomplish this purpose and become skilled in the areas that would best suit the needs of the work force. This research into the implementation of technology skills is beneficial to both teachers and the administrative staff of educational institutions.

Modern curriculum presently executed is often overburdened with activities that are applied for enrichment purposes. This curriculum also does not fully prepare students for the proper use of technology. These observations lead to the problem of proper classroom technology implementation. Many activities taught in the classroom are touched upon in order for teachers to meet their subject requirements. This,

coupled with the need to teach technological skills, places our students' educational future at risk.

The implementation of technology is of great importance in both the intermediate and primary grade levels. Students at the elementary school level show a high level of motivation to learn how to operate technological devices for both learning and pleasure. As students leave from the nurturing atmosphere of an elementary school to a much more demanding junior high or middle school level, a head start in appropriate uses of technology would be a greatly appreciated tool.

The target group for this research consisted of four sixth grade level educators. All of the educators in the target group were employed with less than 10 years of teaching experience. Recently the target site has been working toward the Smart School concept. It was this concept that was initiating a desire for the target group to become more aware of technology integration as a teaching tool. The educators selected as the target group had a minimal amount of experience with computer assisted instruction. Macintosh computers have been placed in the work area of each grade level, thus allowing the target group to become more aware of the assets that this technology offers teachers.

The total sixth grade student body at the target

site was approximately 127 students. The students were primarily Caucasian, and low to middle class with only seven Afro-American students and one Samoan student. These students ranged in ages from 11 to 13 years. The enrollment at the target site was 989 students from five to thirteen years of age.

The writer of this research has designed and distributed a survey that has measured teacher anxiety levels in regard to implementing computer technology in a classroom environment (see Appendix A). This research was administered through the target site as well as three schools with similar demographics of the target school and within close proximity. The three schools have been referred to as school A, B, and C, throughout this research.

The survey administered to the target group focused directly on levels of computer implementation into classroom curriculum. The questionnaire also measures levels of anxiety in teachers when considering the merging of technology into daily lessons. This survey was delivered to 15 educators in four different educational settings with 87 percent educators responding.

The responses showed that these educators were rarely using computers in the presentation of their

subject matter. The results of the surveys gathered from schools A, B, and C also indicated that there was a very low level of computer implementation into the curriculum. Educators at all four schools expressed a mid to high level of anxiety when considering using computers as a teaching tool. One hundred percent of the instructors at the target site expressed an interest in learning more about presentation software and a desire to participate in training that would lower the anxiety level of implementing computer technology in the classroom (see Table 1).

The target site needs assessment supported the findings of the survey completed by the target group. Eighty-five percent of the educators at the target school felt it was a priority need to improve the computer technology at the facility (see Table 2). In regard to the need for technology training, 30 percent of the staff felt it was a priority need to be trained, while 60 percent expressed a desire to improve their skills with training. Only ten percent of the faculty at the target site felt there was little or no need to increase the technology training.

TABLE 1. Teacher Pre-Survey Results

1. How often do you use computer assisted instruction in your classroom:

NEVER	RARELY	OFTEN	FREQUENTLY
23%	54%	15%	8%

2. How would you classify your level of anxiety in attempting to use computers as a teaching tool?

LOW	MEDIUM	HIGH
7%	69%	23%

3. To what degree do you feel comfortable merging computer technology with the existing curriculum?

LOW	MEDIUM	HIGH
77%	15%	7%

4. Please note your current knowledge concerning the following technologies:

	LOW	MEDIUM	HIGH
MACINTOSH COMPUTER.....	8%	46%	46%
OVERHEAD PROJECTION PANEL..	62%	38%	0%
MICROSOFT POWERPOINT PRESENTATION SOFTWARE	100%	0%	0%

5. Desire to teach with presentation software if properly trained.....100%

6. Educators interested in learning more about Microsoft Powerpoint presentation software and its uses in the classroom.....100%

Survey 2. Teacher Pre-Computer Technology Implementation

	HIGH	AVG.	LOW
NEED FOR IMPROVEMENT.....	85%	12%	3%
NEED FOR TRAINING.....	30%	60%	10%

Teacher readiness includes a complete understanding of the curriculum that is being taught. This curriculum content should consist of activities that continually build self confidence and self-esteem, along with content mastery goals. A classroom, along with the teacher and atmosphere, should be one that a student

would find comfort and security. This would guarantee the students a feeling of confidence when stepping into the next level of education. Due to the impact technology has on both education and leisure life, a strong understanding of technological systems will secure that feeling of confidence.

As shown on Table 2, 85 percent of the target faculty felt that computer technology at the facility was a priority need. Ninety percent of the educators at the target site felt a need to increase technology training. From the research attained and the surveys administered, the following conclusions were drawn:

WHAT IS: The sixth grade teachers at the target site displayed a 25 percent comfort level when implementing computer technology into daily lesson plans.

WHAT SHOULD BE: Seventy-five percent of the sixth grade teachers at the target site should feel 100 percent comfortable merging computer technology with their daily curriculum.

THE DISCREPANCY GAP: There was a 75 percent difference between what was and what should be.

THE GOAL: The author's goal was to design and implement a program that would lower teacher anxiety in relation to computer presentation and enable the target group to apply effective computer technology in the classroom.

Therefore, there must be a 20 percent decrease in anxiety in relation to computer integration into curriculum, and a 20 percent increase in knowledge of presentation software in order for the goal to be achieved.

The factors that could have possibly affected the success of this practicum were coordination with the target site computer lab instructor and readiness of the target group to participate. The computer lab had the hardware and software needed for this practicum research. Scheduling to meet the needs of the target group, and to allow 100 percent participation needed to be established.

Technology has clearly become an integral tool that must be used in modern educational curriculum to prepare students to become life long learners. Professional development is also imperative to assure that a school is a place for the on going learning of both the teachers and the students. Data found in the target site needs assessment, school improvement plan, technology plan, and the Florida Commission on Education Reform and Accountability Blueprint 2000 plan (1994) have proven that technology is a problem area.

The problem for this practicum research stated that 85 percent of the teachers at the target site felt there

was a priority need to improve the implementation of technology in classroom curriculum. Ninety-two percent of the colleagues at the target school displayed a moderate to high level of anxiety in attempting to use computers as a teaching tool. The following proposed objectives were to play an integral part in addressing this problem:

OBJECTIVE ONE: After 12 weeks of implementation,75 percent of the target group will demonstrate a 40 percent increase in utilization of computer presentation skills as measured by a teacher made Post-assessment (see Appendix B).

OBJECTIVE TWO: After 12 weeks of implementation, 100 percent of the target group will demonstrate a 20 percent decrease in anxiety in attempting to use computers as a teaching tool as measured by a post-attitudinal survey (see Appendix C).

OBJECTIVE THREE: After participation in a 12 week project, the target group will improve its awareness and knowledge of presentation software by 20 percent as measured by a teacher made pre- and post-assessment (see Appendix D).

CHAPTER II

Research and Solution Strategy

Modern society has put a major emphasis on improving technology standards. All facets of our daily economy currently rely on technology and telecommunications. Many of these changes in technology are not visible to us during a typical daily excursion. However, behind the scenes of automated teller banking systems and long distance telephone communications are just two functions that we utilize and take for granted. Individuals breaking through the starting gates of the minimum wage work force quickly realize there are very few job opportunities that do not require at least limited knowledge of computer skills.

The target school district's close proximity with the cutting edge advancements of the United States Space program, allow the students to see first hand the importance of technology in our society. Telecommunication begins with the positioning of communication satellites in our world's orbit. The target district's students are continuously reminded of this technology when studying local current events. Space shuttle expeditions, as well as military rocket

launches, are a common occurrence in this county.

Students in today's educational system are very excited to be part of this modern technology thrust and are eager to learn new technologies. Home computers are enhancing the skills of students through extra-curricular activities. Not only do these computers assist in the child's education out of the classroom, but they also have capabilities that allow the children to play games. As technology has increased in both personal and professional perspectives a need for teacher training has become mandatory. Computer assisted education is a learning tool that will display its rewards continually in and out of the school. The writer of this practicum conducted a research pertaining to teacher anxiety in relation to the use of computers as a teaching tool. Through this research it was the writer's intent to find a suitable solution for the target site which would address the problem of teacher anxiety when using computer assisted presentation in the classroom.

Brandt (1993) went beyond the school environment and into the community in his research. It was this author's intent to define the role of the parent in education as related to that of the teacher and school. Brandt continued to relate the curriculum and the

technological implementation to the leisure use of any technology in the home environment. This research led Brandt to the conclusion that a large percent of elementary school children had access to computers and multi-media equipment both at home and in school. Therefore, teacher training in these areas is imperative to guarantee effective learning in the classroom. Recommendations by Brandt (1993) through this research included the need for teachers to increase their training and use of technology in the classroom.

Attitudinal surveys administered at the target site and three surrounding educational facilities, found similar results showing frustration and anxiety were evident in the majority of the teachers in their attempts to implement technology in their classroom. What can educators do to become more comfortable when designing their curriculum to include the use of technological presentation software? It is this information that directed the author of this research to believe the modeling of effective uses of technology is imperative in teachers. In order for teachers to model the effective use of technology, they must first become computer literate. Educators must be properly trained with the uses of these new and improved technological teaching strategies. If teachers in today's society are

expected to step away from the old saying "Teach the way you were taught,"effective hands-on training in computer assisted teaching is essential.

Research by Goldenberg and Gallimore (1991) addressed the need to rid our educational programs of the quick-fix teacher workshops. These mini-programs need to be replaced with staff development that provides intellectual stimulation and opportunities to develop new knowledge and skills. This article focused on a sincere concern for students in the American education system to be better prepared to deal with the continually changing technological society. Goldberg and Gallimore (1991) found that students were showing difficulty keeping up with technological preparations needed to enter the work force. The authors then directed attention to the professional training teachers were receiving to educate the students entering the working society. The authors suggested a concentrated effort to train teachers to implement a variety of technology into their daily curriculum by setting up training sessions into beginner, intermediate, and expertise levels. In order for the educators to participate, they must attend the beginner courses and then graduate to the next, upon completion of the first program.

Technology training is a topic of high interest for school systems throughout our nation. Locally, technology training is addressed within the target district through school improvement plans. At the state level, the Blueprint 2000 plan works with restructuring and school improvement and states its interest in the improvement of technology in education. It is the responsibility of the public school system to meet the demands of parents, school boards, and society and begin to administer effective training to teachers so that they are able to become a facilitator of technology in the classroom.

The target school district has become aware of the lack of computer implementation in the classroom. Hecker (1993) discussed many changes in our lives due to technological advances. Computer assistance through the use of bank cards and telephone systems are two areas that the author described to have changed in our modern society. The problem that Hecker discussed is related to the educational system. This author feels education has not kept pace with the changes brought about by technology. Educators who have been taught without the use of technology find it a difficult task to attempt changes in their teaching styles to include computer integration. No modeling of computer integration was

observed during their schooling to become teachers, therefore, their own curricula lacks the integrated strategies that computers have to offer. This author observes computers as becoming a more utilized tool in classroom preparation and management. However, these activities teach more about the computer than any attempt to utilize the computer as a teaching tool. Hecker feels "Instruction in using the computer (and related technologies) as a means of delivery should be regular events, modeling good teaching behavior, not something scheduled as part of the syllabus to fit a requirement of the course."

An attempt by the target district to decrease anxieties in computer integration has been observed through the district needs assessment. For the past eight years, "How to use computers (and related technologies) effectively in the instructional setting," has ranked within the top five items on the needs assessment. This district also encourages teachers who implement technology in the classroom to present materials at local, state, and national conferences with the use of Title II funding. Hecker (1993) also stated that "Only through modeling of expected teacher behavior can we accomplish the goal of teacher acceptance of technology as a normal, every day part of the

instructional process."

Research has identified various reasons for teacher frustration and anxiety in regards to computer assisted instruction. DeBettencourt and Matson (1994), for example, described a school district that recognized a need to introduce technology into their curriculum. With this, the district established computer labs in all schools. These renovations to the school buildings, however, provided no immediate benefits to their crippled technological curriculum. Teachers at the school sites resisted the uses of the new technology in the classroom. The authors discussed the importance of teacher training and assessing teachers' abilities before developing its novice level, lecture based in service program. A result of improper educator training was much of the new hardware remained idol and under-used by most classroom teachers.

DeBettencourt and Matson expressed the importance of proper teacher training. This research employed a governing body, the Educational Technology Committee (ETC), to measure teachers use of technology and rate it from high use (Level VI) to non use (Level II). These authors stated the success of this program as a two-fold process. First DeBettencourt and Matson (1994) discussed the multi-level training program. This

program allowed educators to experiment with the new technology at a comfortable pace. In the second phase of this program, the educators in the Level VI programs acted as mentors to those in lower levels. Teaching teams acted as facilitators to different groups of varied skill levels. These groups developed group and individual goals based on ability.

Another approach to teacher training is discussed through an article by Frances Richardson. According to Richardson (1993) any development in technology integration in a classroom will be unnoticed until teachers grasp this knowledge. This author also stressed the importance of proper education of technology as a problem solving tool with teacher candidates entering the work force. Richardson felt it was imperative to employ educators who can instill technology awareness in their students.

According to McFarland (1995), it is of great importance to utilize a multimedia software that is beneficial to your personal needs. Negative feedback is an all too often occurrence when experimenting with educational multimedia software. The market is flooded with programs that may be of little use to your specific curriculum. Further, school systems spend limited funds on presentation software that ultimately ends up on a

media center shelf collecting dust because these programs do not meet the needs of the learner or instructor. McFarland introduces a ten point checklist that would promote an effective approach in selecting multi-media software that would fit within the parameters of educational needs. These findings are supported by research from Novelli (1993).

Novelli's research related the importance of specific learning objectives to the proper selection of computer assisted instruction. This author feels it is essential for the teacher to understand the relationship between the technology being implemented and the curriculum being taught. Three educators throughout this article described their successes with the implementation of technology as a teaching tool. The importance of meaningful uses of technology was stressed in each successful case.

In studies conducted by Van Horn (1994), research presented about designing high-tech schools was related to training costs, as well as the finances needed for the hardware and building renovations. Van Horn explained that even before technology is in place it is important to begin educator training in the uses of technology. Through this research the Gardner Group has estimated that, after five years of use, only 18 percent

of real cost of computer technology goes toward hardware; 82 percent of the cost leads toward training, upgrades, maintenance, and repairs. Van Horn continued by discussing a program that ultimately assisted the initial training plan. Once a teacher had become proficient with a specific type of technology, that educator was designated a "teacher expert." These experts were then selected to assist in training remaining faculty still in need of assistance.

Research by Bell (1993) emphasized the importance of teacher access to computers. At the collegiate level it is not uncommon to find a computer on most professors' desks. However, public school technology has not led itself to this luxury. This author believes that all teachers should have easy access to a computer and the best software available to lighten their heavy paperwork load, simplify record keeping, and facilitate daily computerized instruction.

A study by Peck and Dorricott (1994) revealed how technological tools have the ability to foster students' abilities, revolutionizes the way they work and think, and gives them new access to the world. The writers of this research felt that "Businesses have been building electronic highways while education has been creating an electronic dirt road." These feel computers have

increased, rather than decreased, novice teachers workloads. This theory was based on the belief that computer illiterate educators were not using computer technology properly due to lack of training. In contrast to this theory, the authors stated that once the educator becomes computer literate and properly trained, the work load is decreased and educators use technology as integral components of learning.

Tarbert and Dallman (1994) found success in preparing teachers for technology through two major commitments put in place by the school district administrators. First, the school system promoted professional growth by designating funds and establishing teacher release time for attendance at professional conferences, subscriptions to educational publications, and participation in peer evaluation. The second commitment allowed the district to adopt and support an ongoing process of teacher involvement and redefinition of both curriculum and systematic assessment. These writers stated that these two commitments along with prior investments and funding have successfully involved all teachers in specific technology training and awareness of technology integration techniques.

Sammons (1994) supported the findings of Bell

(1993). This research labeled deterrents in using multimedia as a lack of equipment, lack of time, and lack of knowledge. This research stated that many educators were not aware of the capabilities that computer technologies have to offer. Further, educators not knowledgeable of how multimedia will help them in the specific courses they teach or how it will help them fulfill their objectives. The research then moved to motivational strategies such as making equipment readily available, providing time for faculty development, providing support, and providing a selection of easy-to-use hardware and software. Sammons believed a formalized workshop program would allow a faculty to begin with simple computer presentations, and then grow into multimedia.

Research by Holzberg (1995) showed that 87 percent of teachers had access to computers; 68 percent of teachers shared computers, 19 percent enjoyed their own computers, and 13 percent had no access to computers. This author also described some basic techniques that would allow teachers to feel more comfortable when utilizing computers as a teaching tool. Holzberg emphasized the idea that the educator should not work the computer, rather the computer should work for the educator.

In addition to the research stated above, additional studies were conducted in three settings in close proximity of the target site and having similar demographics. The purpose of the research of these three settings was to ascertain if the solutions at these settings could be used as suitable alternatives for teacher anxiety when using computers as a teaching tool at the target school.

The three school sites, referred to as school A, B, and C, showed similar problems in relation to anxiety with computer implementation and the use of presentation software as that of the target site. It was within the goals of this research practicum to produce a training program that would be functional in the decrease of teacher anxiety with computer presentation at these school settings as well as the target site.

Research collected at school site A found teachers did feel anxiety in attempting to integrate computers in their curriculum presentation. It was only rarely at this facility that computer assisted instruction was implemented into lesson plans. Educators felt very little comfort when merging computer technology with existing curriculum, but showed a high level of interest when asked if there was any interest in learning more about presentation software.

Implementation of computer technology in curriculum at school B was also very limited. The educators at this facility felt comfortable when using a Macintosh computer for educational purposes. However, the computer was not used often for the presentation of subject matter, but rather it was used more for student reinforcement strategies. Teachers at this school site showed a great desire to be trained with the use of presentation software.

A high level of anxiety was observed at school C when teachers attempted to implement technology into existing curriculum. As with school A and B, school C educators showed a moderate level of comfort when using the Macintosh computer, but rarely, if ever, applied presentation software to the curriculum. School C teachers also showed a high desire to experience training in the use of presentation software.

In order for this research to develop and function properly, an additional resource applied was the use of a Quality Circle. The Quality Circle assisted the writer of this practicum in utilizing management interaction, an Educational Leadership principal competency. This concept allowed the participants of this project to discuss the pros and cons, evaluate, critique, and monitor the progress of this practicum.

Feedback to the writer during this practicum has promoted possibilities of any learning strategies to be introduced to improve the effectiveness of this program.

Solution strategy

The amount of research that has been published on the topic of teacher anxiety when implementing technology in a classroom environment showed a sincere interest on improving education in this area. After having researched the literature pertinent to this problem, as well as school site A, B, and C to find viable solutions, this writer has applied aspects of several solution strategies reviewed, to produce a solution for the target site.

This writer has discarded the solutions of Hecker (1993) concerning the need for computer delivery as a regular event. This was not a viable alternative for the target site at the present time as the educators at this facility are just beginning to attempt the use of technology as a presentation tool. It is through this practicum and other in service programs that this staff shall educate and train to become more current users of presentation software.

Richardson's (1993) research pertaining to restructuring the education of computer technology in

teacher candidates appears to be sound. However, it was not be an acceptable solution for the target school. The target group for this practicum was educators employed on a permanent staff and not candidates for teaching positions. Therefore, Richardson's research is impractical for this practicum.

The specific nature of understanding the relationship between the technology being implemented and the curriculum being taught by Novelli (1993) was also an unacceptable strategy for the target school problem. These ideas of theory offered by Novelli were not within the realm of this research.

Research provided by Van Horn (1994) stated the importance of teacher training in technology even before the technology is in place. This research was rejected as the technology hardware at the target school was presently in place and active in the technology lab. Frustration with computer integration, not computer hardware, continues to be the anxiety problem that this research is directed to decrease.

According to Bell (1993), it is essential to have a computer on the desk of all teachers. This research was rejected. It was not within the resources of this practicum to provide strategies or solutions based on school board and district level funding. The target

site is presently involved in technology grant writing. However, the resource computer lab was chosen as the work station for this practicum.

Also rejected by this writer was research found by Sammon (1994). This research, as similar to Bell (1993), emphasized the importance of the access to technology hardware. Sammon's research was not within the design of this practicum, therefore it was rejected.

The author of this research felt that data gathered by Brandt (1993) concerning use of technology in the home environment is an effective approach to improving the implementation of technology in the classroom. This research was accepted because it has a design that could be initiated at the school curriculum level, and is economically feasible. Further Brandt's research could be approached at a pace that is comfortable for the teacher. Community involvement is a strong point for this research. Parents could assist this program by maintaining close communications with the child's teacher.

Research by Goldenberg and Gallimore (1991) has also been accepted by this author. This research has proven that there is no quick and easy solution to the improvement of implementing technology in the classroom. Goldenberg and Gallimore felt the need to develop a more

effective staff development. Many in service programs are introduced to teachers. If the in service is not supported and followed up with assistance in new structure or design, the in service programs are not properly implemented and become ineffective for the teacher. Staff development is a very strong approach to the improvement of computer implementation.

The author of this practicum has accepted research provided by DeBettencourt and Matson (1994). This research cites the strategy of rating technological abilities in educators to produce a multi-level training so teachers have an opportunity to train at their comfort. Secondly, once teachers reach a high level of knowledge, they become facilitators to the educators at lower levels. Strategies found in this research were functional through the program of this practicum.

This writer has accepted the research provided by Peck and Dorricott (1994). These authors' felt that impractical use of computer technology has increased rather than decreased an educators work. This writer applied training strategies discussed by Peck and Dorricott as an integral part of the strategy design of this practicum.

Tarbert and Dallman (1994) offer two district level administrative commitments for training educators

that were accepted as part of this practicum. The commitment of increasing funding and teacher release time for training could result in the fostering of positive attitudes pertaining to computer integration in the classroom. The second commitment supported the redefining of curriculum and systematic assessment. This appeared to be functional and steps were taken to blend these ideas with staff development at the target site.

This writer supported and accepted the research by Holzberg (1995). Basic computer techniques are recognized as an area lacking at the target site. These basic training strategies could assist in reducing teacher anxiety when implementing technology into classroom curriculum.

In addition to the research and solution strategies recognized throughout this chapter, it was within the realm of this practicum to recognize partial solution strategies form schools A, B, and C. These three schools showed teacher anxiety in regards to computer integration into curriculum. However, all three school sites were currently involved in educator training and displayed a strong desire to be trained even more extensively with presentation software. It is this practicum that could be combined with other computer

training that may prove beneficial as a strategy for the target site.

Following a thorough review of the research gathered for this practicum, and a review of the three school sites surveyed, this writer has integrated several strategies to create a staff development program that will assist in reducing teacher anxiety when implementing presentation software into daily classroom curriculum. By combining the components of the research previously studied, it was the intention of this author to implement "Computer Technology in Classroom Curriculum," or **C.T.C.C.**

This practicum has utilized the following strategies in order to assure an effective program: attained five computer work stations in the computer lab of the target school; acquired the expertise assistance of the technology lab instructor and investigated possibilities of the appearance of a computer consultant; designed and implemented a training program to assist in developmental computer skills; acquired educational software designed to assist presentation of subject matter; trained target group in implementation of presentation software so they may in turn prepare to facilitate the training of the remaining target site staff.

Educators at the target school have shown an interest in training through the C.T.C.C. program. The writer of this program has designed and coordinated a 12 week training program. The make up of this 12 week program was such that it would involve the target group, this writer, the technology lab instructor, and the use of a quality circle. It was the intention of this writer to implement this computer training program so that the target group would increase computer skills pertaining to the presentation of curriculum, and decrease anxiety in regards to the implementation of computer technology in the classroom.

The C.T.C.C. program utilized five work stations in the computer lab following the dismissal of students at the target site. Through this 12 week training program the writer of this practicum acted as the computer instructor with assistance from the technology lab instructor. This program involved four sixth grade educators and utilized a quality circle to assist in the evaluation of the effectiveness of both the program and the instructor.

CHAPTER III

Method

In order to solve the problem addressed by this practicum, this author has elected to use the Computer Technology in Classroom Curriculum program. This program was designed to increase computer integration in classroom curriculum and decrease teacher anxiety when implementing computer technology in presentation of subject matter. The writer of this program acted as the instructor throughout this developmental program.

The target district is pushing the implementation of technology in the classroom through the use of state monies and grant funding to increase the technological abilities at each school site. This target school is continually improving the school site to become closer and closer to the "Smart School" concept. It is this information that has led this writer to develop the C.T.C.C. program. The writer of this practicum feels that the C.T.C.C. program has enhanced the technological abilities of all staff members participating, and has also trained the target group to act as facilitators and train the remaining staff with presentation software.

The personnel that were necessary for the C.T.C.C.

program to function properly were a computer instructor (the writer), a technology lab instructor, and the target group consisting of four sixth grade educators. The duties of the instructor included providing guidelines and policy for the effective implementation of this program. Effective oral communication and leadership qualities were an essential supplement that must be portrayed by the writer of this program in order for the C.T.C.C. program to produce the desired outcomes. The school site technology lab instructor acted as the facilitative assistant and aided in the delivery of program software and assisted in the set up of the computer hardware needed.

Throughout this training program, the target group met with the instructor and discussed strategies through the use of a quality circle. This strategy has enhanced management interaction, which is a principal competency within the realm of the Educational Leadership requirements. This process also allowed the opportunity to solve any problems or enact alternative strategies to reassure the effectiveness of the delivery of this developmental plan.

Through the planning for the C.T.C.C., it has been assessed that the following materials were required to implement this program:

(5)-Macintosh LCIII or LC 520 CPU's

(5)-unformatted data disks

(1)-overhead projection panel

(5)-software programs; Powerpoint

The tasks involved in the C.T.C.C. program required critical thinking skills through the implementation of the presentation software programs as a source of generating ideas and through the organization and development of computer assisted curriculum presentations. As a result of the participation in the C.T.C.C. program the target group has demonstrated the ability to perform computer assisted tasks in the development of curriculum, composed a brief computer assisted presentation, and shown an increase in self-concept as related to computer integration as a tool.

Monitoring the progress of the target group has been the responsibility of this writer and has occur during each session. This author has become actively involved in the progress of each educator and continually maintained a high level of participation by responding to needs of the target group as they arose.

Once materials, time, and space in the technology lab had been approved, this writer then proceeded to organize the time frame. Twelve sessions of forty minutes each were held in the technology lab of the

target site. The C.T.C.C. program was conducted after school hours on Wednesday afternoons.

The initial two sessions were designed to introduce the target group to the technology lab and assess their abilities through the use of a computer performance pretest (Appendix B and D). Sessions three, four and five were tutorial in design to allow the target group to become acquainted to the capabilities of the Powerpoint software. The sixth, seventh, and eighth session were dedicated to the designing of individual classroom presentations using Powerpoint as an introduction. Sessions nine and ten allowed each individual of the target group to share the design of their Powerpoint curriculum introduction. The eleventh session was an enrichment activity that allowed the target group to experiment with other software programs that could enhance their classroom curriculum through presentation, as well as tutorial activities. The final session was designed to assess the progress of the target group through the C.T.C.C. program using a C.T.C.C. post-test (Appendix B and D).

The following is a time line schedule showing the 12 week progression of the C.T.C.C. program:

Week 1: Introduced teachers to technology lab; reviewed components of work station

Week 2: Administered C.T.C.C. computer performance pretest

Week 3: Introduced Powerpoint presentation software; Conducted quality circle discussion

Week 4: Continued introduction to Powerpoint presentation software; discussed curriculum needs to coordinate group activities

Week 5: Instructor and facilitator shared benefits of uses of Powerpoint software; began group instruction

Week 6: Group instruction and design of presentation; technology lab instructor introduced overhead projection panel and demonstrated set up and functions

Week 7: Began individual presentation project; quality circle discussion and evaluation

Week 8: Concluded work designing individual computer assisted presentation

Week 9: Shared and demonstrated computer assisted presentation projects designed with Powerpoint

Week 10: Concluded the sharing of presentations using Powerpoint presentation software

Week 11: Introduced optional presentation software; instructed on basic uses

Week 12: Evaluation; post test administered to target group to determine progress through C.T.C.C. program

The C.T.C.C. program could be implemented in any elementary school setting. The results of this program have provided teachers with hands on learning experiences that would significantly improve the implementation of technology into the modern day curriculum. This program also established a feeling of unity and a point of focus within the faculty and initiated team planning within certain grade levels, as well as across grade levels.

CHAPTER IV

Results

The author of this research was totally responsible for selecting measurement instruments, collecting data, and establishing time tables. It was also the responsibility of this writer to reach critical decisions regarding the success of each objective.

This research was designed to enhance an educator's ability to present curriculum and instruct a group of students using computers as a presentation tool. Throughout this training the target group was assessed using a written computer knowledge performance pretest and post test, and also a written computer software knowledge pretest and post test. In order for the first objective to have been met these assessment tools established a base line that could determine the success of the knowledge gained through the participation of the C.T.C.C. program.

Information gathered on the pre and post computer knowledge performance evaluations showed a substantial increase in the understanding of the functions of components in a computer work station. This increase in computer station knowledge was evident in the collection

of information gathered from the computer knowledge pretest in relation to the information gathered in the computer knowledge post test. Within the target group an increase in computer knowledge by 100 percent was noticed when labeling functions of specific components of a computer work station. The target group received flawless ratings when administered the computer knowledge performance post test (Table 2).

TABLE 2. **Results of Computer Knowledge Performance Pretest and Post test**
(Comparison of pretest and post test scores)

	(correct scores) PRETEST	POST TEST
1. What part of the computer stores programs and keeps information readily available?	75%	100%
2. What is a C.P.U.	50%	100%
3. Most modern computers and software are equipped with a tutorial program.	50%	100%
4. A Macintosh computer is not an appropriate tool for teaching in regard to presenting curriculum.	75%	100%
5. To save information onto a disk drive you simply review file icon for options.	25%	100%
6. A mouse is an effective tool used in place of the keyboard.	50%	100%
7. What technological device allows computer images to be seen on a big screen?	50%	100%

(See Appendix E for Individual Target Group Data)

The results of this assessment show evidence that the target group's knowledge of computer work stations have increased, allowing the teachers to feel more comfortable when planning the presentation of classroom curriculum using a computer station. This assessment

has also shown that objective one of this practicum has been successfully achieved. 100 percent of the target group has demonstrated an improvement with the utilization of computer presentation skills by scoring a 100 percent on the post computer knowledge performance test. Information gathered through the use of quality circle discussions during this research has shown not only that the target group has established an affective working knowledge of computer stations, but also has extended a high level of curiosity as to other technological attributes that a computer can offer to curriculum presentation, that are not measured by this assessment.

This writer stated in objective two of this practicum that 100 percent of the target group would demonstrate a 20 percent decrease in anxiety when implementing computer technology into teaching strategies as measured by a pre and post attitudinal survey. This objective was also met. Data gathered from the results of the post attitudinal survey have shown an increase in all categories measured with the attitudinal survey. (Table 3).

TABLE 3. **Results of the Pre and Post Attitudinal Survey**
(Comparison of pre and post survey results)
Pre-Survey / Post Survey

1. How often do you use computer assisted instruction in your classroom?	**NEVER**	**RARELY**	**OFTEN**	**FREQUENTLY**
	23%/0%	54%/25%	15%/50%	8%/25%
2. How would you classify your level of anxiety in attempting to use computers as a teaching tool?	**LOW**	**MEDIUM**	**HIGH**	
	7%/75%	69%/25%	23%/0%	
3. To What degree do you feel comfortable merging computer technology with the existing curriculum?	**LOW**	**MEDIUM**	**HIGH**	
	77%/0%	15%/50%	7%/50%	
4. Please note your current knowledge concerning the following technologies:	**LOW**	**MEDIUM**	**HIGH**	
1. MACINTOSH COMPUTER.....	8%/0%	46%/0%	46%/100%	
2. OVERHEAD PROJECTION PANEL...	62%/0%	38%/50%	0%/50%	
3. MICROSOFT POWERPOINT PRESENTATION SOFTWARE	100%/0%	0%/25%	0%/75	

(See Appendix E for Individual Target Group Data)

The third proposed objective to be met was designed to assess gained knowledge in computer software used within classroom curriculum. This objective was proven successful through the use of a written computer software knowledge pretest and post test. Results of the data collected showed a 20 percent or better increase in the target groups knowledge and understanding of several types of computer software used in a classroom (Table 4). Both tutorial and presentation software were evaluated throughout this practicum research and the target group showed successful gains in knowledge with both types of software.

TABLE 4. Results of the Computer Software Knowledge Pretest/ Post test

(Comparison of Pretest and Post test)

1. Would ClarisWorks be a good choice of software to use in presenting classroom curriculum?	**Yes**	**No**
	50%/0%	50%/100%

2. What capabilities does ClarisWorks offer?	**Correct Response** 75%/100%
3. What capabilities does Powerpoint offer?	**Correct Response** 25%/100%
4. In order for teachers to complete grade recording, they would select Spread sheets.	**Correct Response** 75%/100%
5. Hyperstudio software program is student oriented.	**Correct Response** 50%/100%
6. Powerpoint software is teacher oriented.	**Correct Response** 50%/100%
7. Powerpoint allows the user to only go through a sequential order.	**Correct Response** 25%/100%
8. Hyperstudio allows the user to jump around within the project.	**Correct Response** 50%/100%
9. The Writing Center software program is designed for word processing.	**Correct Response** 75%/100%

(See Appendix E for Individual Target Group Data)

As a mid course evaluation, teacher observations of the target groups progress and motivation in the use of the computer for curriculum presentation was applied. Changes to the C.T.C.C. program were made only if it was recognized that planned exercises were not sufficient to reach the goals of the program. Measurements occurred at the beginning and end of the 12 week C.T.C.C. program. By evaluating both the beginning and end phases of this program, it effectively measured the success of the program and the self improvement of the group who participated.

The results of this practicum were very positive. The target school's educational staff has a very positive attitude toward the integration of technology into classroom curriculum. The C.T.C.C. program has

developed the target group into facilitators who can now transfer their learned knowledge of presentation software to the target school staff members who have shown a desire to learn this new technology.

Other data gathered from this practicum show a very strong desire for technology training to continue as a part of the staff development at the target site. Teachers at the target school are also much more aware of the computer software that is available in the target school computer lab and media center. If the C.T.C.C. program was established as an introductory level computer training program, it could be followed with a variety of in service programs that could enhance the uses of classroom computers for curriculum presentation, as well as fulfilling tutorial needs.

CHAPTER V

Recommendations

Computers have become a very important part of todays modern society. Even the most basic employment opportunities in this decade require at least a general understanding of computer technology. In a society as demanding as that of the United States of America, it is imperative to introduce technology to students in education as early as possible. This opportunity has become a realistic component of elementary, as well as secondary curriculums across the nation. The newest computer hardware and software are constantly purchased by school systems to keep up with the demands, changes, and needs of our modern society. In order for this technology to be utilized to its maximum potential, school systems must continually improve their staff development programs to train and prepare educators to put this technology to its most practical and effective uses.

The ability to apply technological capabilities has become a basic skill that is essential to all members of today's society. Therefore it is a necessity for educators to have the knowledge and confidence level to

incorporate modern technology into all areas of classroom curriculum. Students must be able to effectively manipulate computer technology to assist in their learning experiences. Technology used as a tutoring tool is a highly efficient use of computers in a classroom. However, educators must also begin to apply technology to enhance the presentation of their curriculum.

Through the Blueprint 2000 Plan, it is apparent that the Florida Department of Education has stressed its desire to see technology continually upgraded throughout the states county school systems. Proper training to assist with the application of technology in the presentation of curriculum is essential. It is also imperative to continually improve and extend the training opportunities for those educators who are implementing the uses of computer technology into the presentation of classroom curriculum. With a growing emphasis placed on computer integration into teaching strategies, educator training has grown to be a critical requirement necessary for the development and success of computer technologies integration into the modern educational field.

Within the target site, administrators allocate time for teachers to improve their knowledge of

technology through the attendance of training programs offered by the target district. With this in mind, this writer feels the C.T.C.C. training program should be strongly recommended to other schools within the target district. The C.T.C.C. program is designed as an introductory training program. It was the main focus of this program to introduce computer software that can be applied to the presentation of classroom curriculum. However, the C.T.C.C. program extends a strong emphasis on other computer software programs that can be utilized as tutorial devices, or simply for independent learning opportunities.

As long as school systems continue to spend monies to improve their technology status, they must continue to understand the importance of improving teacher training in the uses of technology. The C.T.C.C. program could easily be expanded to grow with a staff that is applying technology to their classroom curriculum. This program joined with other technology training could become an integral part of an effective staff development plan.

Educators must always be willing to integrate new ideas into their existing curriculum to assure the success of all students. As technology continues to take great strides in today's society, teachers must

continually improve their teaching styles by developing their skills and keeping abreast of the uses of modern technology in education.

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APPENDICES

Appendix A

Technology Awareness Survey

TECHNOLOGY AWARENESS SURVEY

WHAT IS THE TOTAL STUDENT POPULATION AT YOUR SCHOOL?_____
WHAT IS THE STUDENT ENROLLMENT IN YOUR CLASSROOM?_____

HOW OFTEN DO YOU USE COMPUTER ASSISTED INSTRUCTION IN YOUR TEACHING METHODS?

NEVER	RARELY	OFTEN	FREQUENTLY	VERY OFTEN
1	2	3	4	5

HOW WOULD YOU CLASSIFY YOIUR LEVEL OF ANXETY IN ATTEMPTING TO USE COMPUTERS AS A TEACHING TOOL?

LOW		MEDIUM		HIGH
1	2	3	4	5

PLEASE RATE YOUR CURRENT KNOWLEDGE OF THE VARIOUS TUPES OF PRESENTATION SOFTWARE CURRENTLY ON THE MARKET.

LOW		MEDIUM		HIGH
1	2	3	4	5

TO WHAT DEGREE DO YOU FEEL COMFORTABLE MERGING COMPUTER TECHNOLOGY WITH THE EXISTING CURRICULUM?

LOW		MEDIUM		HIGH
1	2	3	4	5

PLEASE NOTE YOUR CURRENT KNOWLEDGE CONCERNING THE FOLLOWING TECHNOLOGIES:

	LOW		MEDIUM		HIGH
* MACINTOSH COMPUTER.....1	2		3	4	5
* OVERHEAD PROJECTION PANEL..... 1	2		3	4	5
* MICROSOFT POWERPOINT PRESENTATION SOFTWARE..... 1	2		3	4	5

HOW WOULD YOU RATE YOUR KNOWLEDGE OF COMPUTER TECHNOLOGY?

EXCELLENT GOOD FAIR LIMITED POOR

WOULD YOU TEACH WITH PRESENTATION SOFTWARE IF PROPERLY TRAINED?

YES NO UNDECIDED

WOULD YOU BE INTERESTED IN LEARNING MORE ABOUT MICROSOFT POWERPOINT PRESENTATION SOFTWARE AND ITS USE IN THE CLASSROOM?

YES NO

Appendix B

Computer Knowledge Performance Pretest/Post test

COMPUTER KNOWLEDGE PERFORMANCE
PRETEST/POST TEST

DIRECTIONS: Read each question carefully. Based on your current knowledge, answer each question to the best of your ability.

1. What part of the computer stores programs and keeps information readily available?
   - A. disk drive
   - B. color monitor
   - C. printer
   - D. keyboard

2. What is a C.P.U.?
   - A. computer presentation utility
   - B. computer processing unit
   - C. central processing unit
   - D. central program utility

3. Most modern computers and software are equipped with a tutorial program.
   TRUE FALSE

4. A Macintosh computer is not an appropriate tool for teaching in regard to presenting curriculum?
   TRUE FALSE

5. To save information onto a disk drive you simply:
   - A. edit, cut, and paste
   - B. push control and s simultaneously
   - C. review file icon for options
   - D. restart computer to save all information

6. A mouse is an effective tool used in place of the:
   - A. printer
   - B. monitor
   - C. keyboard
   - D. all of the above

7. What technological device allows computer images to leave be seen on a big screen?
   - A. television
   - B. laser disc player
   - C. projection unit

Appendix C

Technology Attitudinal Survey

TECHNOLOGY ATTITUDINAL SURVEY

1. How often do you use computer assisted instruction in the classroom?

NEVER	RARELY	OFTEN	FREQUENTLY	VERY OFTEN
1	2	3	4	5

2. How would you classify your level of anxiety in attempting to use computers as a teaching tool?

LOW		MEDIUM		HIGH
1	2	3	4	5

3. Are you at a comfort level now when considering using computers to present curriculum?

YES NO

4. How would you rate your current knowledge of computer technology?

EXCELLENT GOOD FAIR LIMITED POOR

5. To what degree do you feel comfortable merging computer technology with the existing curriculum?

LOW		MEDIUM		HIGH
1	2	3	4	5

6. Please note your current knowledge concerning the following technologies:

	LOW		MEDIUM		HIGH
* Macintosh Computer.....	1	2	3	4	5
* Overhead projection panel	1	2	3	4	5
*Microsoft Powerpoint Presentation Software	1	2	3	4	5

7. Do you find presentation software frustrating or difficult to implement into your every day curriculum?

YES NO

Appendix D

Computer Software Knowledge Pretest/Post Test

COMPUTER SOFTWARE KNOWLEDGE PRETEST/POST TEST

DIRECTIONS: Read each question carefully. Based on your current knowledge, answer each question to the best of your ability.

1. Would ClarisWorks be a good choice of software to use in presenting curriculum in a classroom?

YES NO

2. What capabilities does ClarisWorks offer?
   - A. Database
   - B. Communications
   - C. Word Processing
   - D. All of the above

3. What capabilities does Powerpoint offer?
   - A. Data collection
   - B. Presentation
   - C. Communication
   - D. All of the above

4. In order for teachers to complete grade recording, they would select:
   - A. Spreadsheets
   - B. Graphics
   - C. Word Processor
   - D. Communication

5. Hyperstudio software program is:
   - A. teacher oriented
   - B. student oriented

6. Powerpoint software program is:
   - A. teacher oriented
   - B. student oriented

7. Powerpoint allows the user to:
   - A. jump around within your project
   - B. only go through a sequential order

8. Hyperstudio allows the user to:
   - A. jump around within your project
   - B. only go through a sequential order

9. The Writing Center software program is designed for:

A. curriculum presentation C.word processing
B. collecting data/graphs D.drill and practice

Appendix E

Individual Pre- and Post Test Assessment Data

****Note: Target group teachers will be referred to as Teachers A, B, C, and D throughout this table reference ****

TABLE 2. COMPUTER KNOWLEDGE PERFORMANCE PRE- AND POST TEST

Question Number	(Pretest) Correct	/ Incorrect	(Post test) Correct / Incorrect
1.	A, C, D	/ B	A, B, C, D
2.	A, D	/ B, C	A, B, C, D
3.	A, D	/ B, C	A, B, C, D
4.	A, B, D	/ C	A, B, C, D
5.	D	/ A, B, C	A, B, C, D
6.	A, D	/ B, C	A, B, C, D
7.	A, D	/ B, C	A, B, C, D

TABLE 3. POST ATTITUDINAL SURVEY RESULTS

Question Number	Rarely	Often	Frequently
1.	B	A, C	D
	Low	**Medium**	**High**
2.	A, C, D	B	-------
3.	------	B, C	A, D
4.	**Low**	**Medium**	**High**
1.	----	------	A, B, C, D
2.	----	B, C	A, D
3.	----	B	A, C, D

TABLE 4. COMPUTER SOFTWARE KNOWLEDGE PRE- AND POST TEST

Question Number	(Pretest) Yes / No	(Post test) Yes / No
1.	A, D / B, C	A, B, C, D / ----
	Correct / Incorrect	**Correct / Incorrect**
2.	A, C, D / B	A, B, C, D / ----------
3.	D / A, B, C	A, B, C, D / ----------
4.	A, B, D / C	A, B, C, D / ----------
5.	A, D / B, C	A, B, C, D / ----------
6.	A, D / B, C	A, B, C, D / ----------
7.	D / A, B, C	A, B, C, D / ----------
8.	A, D / B, C	A, B, C, D / ----------
9.	A, C, D / B	A, B, C, D / ----------

Appendix F

Leadership Rating Scale

LEADERSHIP RATING SCALE

Directions: Please rate the Leadership Effectiveness skills as are observed by circling a choice from 1 through 5. Choose the number that best describes your feelings about each of the competencies that you observed during the implementation of this practicum.

	Strong				Weak
Oral Communication- Effective expression in individual and group situations	5	4	3	2	1
Leadership- Utilization and application of the appropriate styles and methods in guiding individuals and groups toward task accomplishment.	5	4	3	2	1
Impact- Creating good first impressions with individuals and groups, projecting confidence and security, and exhibiting professional demeanor.	5	4	3	2	1
Planning and Organization- Define the course of action for the accomplishment of specific goals for the Principal/Assistant Principal/ Other, including the appropriate allocation and use of school resources, effective utilization of personnel, and establishing the appropriate activities.	5	4	3	2	1
Control- Establishing and using procedures to monitor and/or regulate processes, tasks or activities. Taking action to monitor delegated activities.	5	4	3	2	1
Technical/Professional Knowledge- Understanding of and ability to apply technological and professional information.	5	4	3	2	1

Appendix G

C.T.C.C. Program Evaluation

C.T.C.C. PROGRAM EVALUATION

Please take the time to comment on your overall evaluation of this program:

Very Valuable Valuable Neutral Not Helpful

What would you have done differently to make this training more valuable?_____
_____
_____

What was the most useful part of this training?_____
_____
_____

Do you think this training has made you more aware of the opportunities that computers offer when applying technology to classroom curriculum?_____
_____
_____

Would you like to see additional follow-up training in computer application? If yes, would you attend?_____
_____
_____

Please add any comments pertaining to the effectiveness or improvement of the C.T.C.C. Training Program:_____
_____
_____
_____
_____

Thank you very much for your time and effort.